

YAGODKIN, Vladimir Nikolayevich; SHVEYTSER, Ye.K., red.; MURASHOVA,
V.A., tekhn. red.

[Production of relative surplus value; comments on the fourth
section of the first volume of Karl Marx's "Capital:"] Pro-
izvodstvo otnositel'noi pribavochnoi stoimosti; kommentarii k
IV otdelu I toma "Kapitala" K Marksa. Moskva, Gos.izd-vo
"Vysshaya shkola," 1961. 60 p. (MIRA 15:2)
(Economics)

MANSIL'YA, Anastasio; SHVEYTSEK, Ye.K., red.; GOROKHOVA, S.S., tekhn.
red.

[The process of the accumulation of capital; comments to the
seventh section of the first volume of Karl Marx's "Capital"]
Protsess nakopleniia kapitala; kommentarii k 7-mu otdelu per-
vogo toma "Kapitala" K.Marksa. Moskva, Gos. izd-vo "Vysshiaia
shkola," 1961. 85 p. (MIRA 15:3)
(Capital)

BLYUMIN, Izrail' Grigor'yevich, prof.[deceased]; POLYANSKIY, F.Ya., prof.,
red.; SHVEYTSEY, Ye.K., red.; GRIGORCHUK, L.A., tekhn. red

[History of economic theory] Istoriia ekonomicheskikh uchenii;
oчерki teorii. Pod red. F.IA.Polianskogo. Moskva, Gos.izd-vo
"Vysshaya shkola," 1961. 266 p. (MIRA 15:2)
(Economics)

RAZDORSKIY, Grigoriy Ivanovich; SHVEYTSEY, Ye.K., red.; MURASHOVA, V.A.,
tekhn.red.

[Commodity production and money under capitalism] Tovarnoe
proizvodstvo i den'gi pri kapitalizme. Moskva, Gos.izd-vo
"Vysshaya shkola," 1962. 62 p. (MIRA 15:4)
(Economics)

ZAYTSEV, Rostislav L'vovich; SEMENKOV, Vladimir Nikanorovich;
SHVEYTSEV, Ye.K., red.; YEZHOVA, L.L., tekhn. red.

[Transformation of socialist labor into communist labor.
The transition to the communist principle of distribution
according to needs] Pererastanie sotsialisticheskogo truda
v kommunisticheskii trud. Perekhod k kommunisticheskomu
printsipu raspredeleniia po potrebnostiam. Moskva, Vys-
shaia shkola, 1962. 57 p. (MIRA 16:2)
(Labor and laboring classes)

SHEKHOVTSOV, Aleksey Vladimirovich; SHVEYTSEY, Ye.K., red.; GOROKHOVA,
S.S., tekhn.red.

[Marxian theory of commodity fetishism] Marksova teoriia
tovarnogo fetishizma. Moskva, Gos.izd-vo "Vysshaya shkola,"
1962. 67 p. (MIRA 15:5)
(Economics)

BUTYSIN, Andrey Yakovlevich; SHVEYTSEY, Ye.K., red.; MURASHOVA,
V.A., tekhn. red.

[The economic law of socialist accumulation] Ekonomicheskii
zakon sotsialisticheskogo nakopleniia. Moskva, Vysshiaia
shkola, 1962. 93 p. (MIRA 15:10)
(Capital)

KONNIK, Iosif Isaakovich; SHVEYTSER, Ye.K., red.; GARINA, T.D.,
tekhn. red.

[Money in a socialist society] Den'gi v sotsialisticheskom
obshchestve. Moskva, Vysshaya shkola, 1962. 110 p.
(MIRA 15:11)

(Money)

ALLAKHVERDYAN, D.A., prof.; AMINOV, A.M., doktor ekon. nauk; AGLAS, M.S., prof.; D'YACHENKO, V.V., dots.; ZLOBIN, I.D., prof.; KADYSHEV, L.A., dots.; KARNAUKHOVA, Ye.S., prof.; KOTOV, G.G., prof.; LEVITANUS, I.M., dots.; LIVSHITS, A.L., dots.; LYAPIN, A.P., prof.; MAKAROVA, M.F., prof.; MASLOV, P.P., prof.; SONIN, M.Ya., doktor ekon.nauk; SOROKIN, G.M.; STRUMILIN, S.G., akademik; TUMANOVA, L.V., dots.; TUROVTSEV, V.I., dots.; FIGURNOV, P.K., prof.; MOKHOVA, N.I., dots., red.; SHCHERBAKOVA, V.V., dots., red.; SHVEYTSEV, Ye.K., red.; MURASHOVA, V.A., tekhn. red.

[The economics of socialism] Politicheskaya ekonomiya sotsializma. Izd.2., perer. Moskva, Gos.izd-vo "Vysshaya shkola," (MIRA 16:3)
1962. 614 p.

1. Chlen-korrespondent Akademii nauk SSSR (for Sorokin).
(Economics) (Communism)

MUKHAMETOV, Geta Sharafiyevich; SHVEYTSEY, Ye.K., red.; GOROKHOVA,
S.S., tekhn. red.

[Wages under capitalism] Zarabotnaia plata pri kapitalizme.
Moskva, Vysshaya shkola, 1963. 85 p. (MIRA 16:3)
(Wages)

BORISOV, Ye.F., dots.; BREGEL', E.Ya., prof.; BUKH, Ye.M., dots.;
VASHENTSEVA, V.M., dots.; GOLEVA, Yu.P., kand. ekon. nauk;
GOLEVA, A.P., kand. ekon. nauk; DEMOCHKIN, G.V., dots.;
DONABEDOV, G.T., kand. ekon. nauk; YERMOLOVICH, I.I., dots.;
KALYUZHNYI, V.M., dots.; KORNEYEVA, K.G., dots.; KUZNETSOVA,
A.S., prof.; MIROSHNICHENKO, V.S., dots.; MYASNIKOV, I.Ya.,
kand. ekon. nauk; PIKIN, A.S., dots.; SIDOROV, V.A.; SMIRNOV,
A.D., dots.; SOLOV'YEVA, K.F., dots.; SOROKINA, I.F., dots.;
TARUNIN, A.F., kand. ekon. nauk; KHARAKHASH'YAN, G.M., prof.;
MENDEL'SON, A.S., red.; SHVEYTSEY, Ye.K., red.; ROTOVA, R.S.,
red.; GARINA, T.D., tekhn. red.

[Economics of socialism] Politicheskaya ekonomiya sotsializ-
ma. Moskva, Gos.izd-vo "Vysshaya shkola," 1963. 476 p.
(MIRA 17:2)

MIRONOVA, Bronislava Lvovna; SHVENTSER, Ye.K., red.; GOROKHOVA,
S.S., tekhn. red.

[Production, turnover and consumption relationship during
the large-scale building of communism] Vzaimodeistvie pro-
izvodstva, obrashcheniia i potrebleniia v period razver-
nutogo stroitel'stva kommunizma. Moskva, Vysshaia shkola,
1963. 75 P. (MIRA 16:12)

(Economics)

COUNTRY : USSR
 CATEGORY : Cultivated Plants. Industrial, Oleiferous, Sugar. M
 ABS. JOUR. : RZhBiol., No. 23 1958. No. 104784
 AUTHOR : Teran, I.S., Shvid', A. A.
 INST. : Kirovograd State Agricultural Experiment Station.
 TITLE : Breeding Castor Oil Plant.
 ORIG. PUB. : Kreskiye itogi raboty (Kirovogradsk. gos. s.-kh. opyt. st.) za 1931-1955 gg. Vyp. 1, Kiyev, 1957. 131-136
 ABSTRACT : Breeding work on castor oil bean plant was resumed in 1946 at the Ukrainian Scientific Research Station of Oleiferous Cultures situated at the northern border of the zone of castor bean cultivation. In this region, castor bean does not mature in all years. Spring frosts to -1° are destructive for sprouts and the first autumn frosts to -2° , -3° , -for adult plants. The fast maturing of the castor oil plant and non-dehiscence of its seed case are the most important characteristics in the breeding work.

CARD: 1/2

SHVIDCHENKO, K. polkovnik.

Morning inspection of a company. Voen.vest.36 no.1:44-47 '57.
(Russia--Army--Inspection) (MLRA 10:2)

170242-080, 506
BANKUZOV, A., gvardii general-mayor; BOLDYREV, N., polkovnik; PORTYANKO, D.,
polkovnik; KORMIL'TSEV, I., polkovnik; KUZNETSOV, A., polkovnik;
VOLYKHIN, A., polkovnik; SHVIDCHENKO, K., polkovnik; PISAREV, G.,
polkovnik; MEYELOV, N., polkovnik; VERTELA, N., gvardii polkovnik;
MURATOVA, A., polkovnik; NIKOLAYEV, A., polkovnik

We discuss projects of new Army regulations. Voen. vest. 38 no.7:2-9
Jl '58. (MIHA 11:6)

(Russia--Army--Regulations)

BLOSHENKO, M.G., polkovnik; GAVRIKOV, F.K., polkovnik; KIRIN, I.D., polkovnik; SHVIDCHENKO, K.Ye., polkovnik; LOSHCHILOV, A.K., podpolkovnik; KUBASOV, A.F., general-leutenant, red.; PETUKHOV, V.I., general-mayor, red.; REVENKO, P.M., general-mayor, red.; VIL'-CHINSKIY, I.K., polkovnik, red.; MEDNIKOVA, A.N., tekhn.red.

[Training manual for young soldiers; second edition] Posobie po obucheniiu molodykh soldat. Izd.2, ispr. i dop. Moskva, Voen. izd-vo M-va obor.SSSR, 1959. 503 p. (MIRA 13:3)
(Military education)

SHVIDCHENKO, L.G.

Examination of the content of lipids in the blood of elderly
and senile persons. Vop. geron. i geriat. 4:209-213 '65.
(MIRA 18:5)

1. Institut gerontologii AMN SSSR, Kiyev.

CA

SHVIDENKO, A.A.

14

Coagulation of water by bentonite. A. A. Shvidenko
(Ukrain. Ministry Health, Kharkov). *Gigiena i Sanit.*
1951, No. 7, 19. Treatment of water with Askani bentonite
requires a dosage of 60-100 mg. /l. to give a water with trans-
parency of 3-11 cm.; it is best done at 16° with pH not be-
low 7.5 and moderate noncarbonate hardness. Addn. of
30-100 mg. /l. of lime to the bentonite improves the effec-
tiveness of the coagulation. G. M. Kosolapoff

Shitov Sci. Res. Sanitary Lab.

SHV IDENKO, I.G.

Antibacterial action of monomycin in experimental *Proteus*
septicemia in white mice. Antibiotiki 10 no. 10:913-916
0 '65. (MIRA 18:12)

1. Kafedra mikrobiologii (zav. - prof. S.I. Sherishorina)
Saratovskogo meditsinskogo instituta. Submitted Dec. 28, 1964.

Shvabko, V. I.

The erection of buildings. Moskva, Izd-vo Ministerstva kommunal'nogo khoziaistva
RSFSR, 1940. 310 p. (50-31099)

TA684.L45

SHVIDENKO, V.I.; AL'PEROVICH, S.Z., redaktor; PISARENKO, V.I.,
tekhnicheskiiy redaktor.

[Selecting machinery for the installation of structural units]
Vybor mashin dlia montazha stroitel'nykh konstruktsii. Kiev,
Gos. izd-vo tekhnicheskoi lit-ry USSR, 1953. 73 p. [Microfilm]
(Building machinery) (Cranes, derricks, etc.) (MLRA 7:12)

SHVIDENKO, V.I.; LEYBFREYD, Yu.M., professor, redaktor; DONSKOY, Ya.Ye.,
redaktor; ZAMAKHOVSKIY, L.S., tekhnicheskii redaktor;

[Complex mechanization of construction work] Kompleksnaia
mekhanizatsiia stroitel'nykh rabot. [Khar'kov] Khar'kovskoe
obl. otd-nie, 1955. 84 p. (MLRA 9:2)
(Construction industry)

AL'PEROVICH, Semen Zinov'yevich, kandidat tekhnicheskikh nauk; CHECHIK,
Aron Abramovich, kandidat tekhnicheskikh nauk, dotsent; SHVIDENKO,
Valentin Iosifovich, kandidat tekhnicheskikh nauk, dotsent;
SHILKOVSKIY, Vol'f Moiseyevich, inzhener; SECHUPETOV, A.N., vedushchiy
redaktor; PATSALYUK, P.M., tekhnicheskiy redaktor

[Erecting buildings of precast reinforced concrete] Montazh zdani
iz sbornykh zhelezobetonnykh konstruktsii. Kiev, Gos. izd-vo tekhn.
lit-ry USSR, 1956. 246 p. (MIRA 10:2)
(Precast concrete construction)

SHVIDENKO, V.I., dotsent, kand.tekhn.nauk, otv.red.; PASHCHINSKAYA, G.N.,
red.; SOLONICHENKO, A.G., tekhn.red.

[Mechanization of construction and road-building operations;
proceedings of the conference of representatives of institutions
for higher learning] Voprosy mekhanizatsii stroitel'nykh i
dorozhnykh rabot; trudy Mezhvuzovskogo nauchnogo soveshchaniia,
29 oktiabria - 1 noiabria 1956 goda. Khar'kov, Izd-vo Khar'kov-
skogo ordena Trudovogo krasnogo znameni gos.univ. im. A.M. Gor'-
kogo, 1958. 336 p. (MIRA 13:1)

1. Kharkov. Budivel'nyi instytut. 2. Khar'kovskiy inzhenerno-
stroitel'nyy institut (for Shvidenko).
(Building machinery) (Road machinery)

LEYBFREY, Yuriy Markovich, prof.; SHVIDENKO, Valentin Iosifovich, prof.;
ISAYEV, N.V., inzh., nauchnyy red.; YUDINA, L.A., red. izd-va;
RUDAKOVA, N.I., tekhn. red.; RODIONOVA, V.M., tekhn.red.

[Assembly of structural elements] Montazh stroitel'nykh konstruktsii.
Izd.2., perer. i dop. Moskva, Gosstroizdat, 1962. 466 p.
(MIRA 15:7)

(Building)

SHVILENKO, Valentin Isidifovich, prof.; MATOKHIN, Vladimir Pavlovich, dots., kand. tekhn. nauk; SMIRNOV, Aleksey Mikhaylovich, dots., kand. tekhn.nauk; FOKOV, Rostislav Ivanovich, kand. tekhn. nauk; CHERNYSHEV, Sergey Fedorovich, dots.kand.tekhn. nauk; YAKIMENKO, L.I., red.

[Assembly of multistory industrial buildings] Montazh mnogo-etazhnykh promyshlennykh zdaniy. Khar'kov, Izd-vo Khar'kovskogo univ., 1964. 142 p. (MIRA 18:3)

SIZOV, Vasilii Nikolayevich, prof., doktor tekhn.nau.;
RUDENKO-MORGUN, Ivan Yakovlevich, dots., kand. tekhn.
nauk; TKHILADZE, Georgiy Rodionovich, inzh.; USENKO,
Vasilii Mitrofanovich, kand. tekhn. nauk; SHVIDENKO,
V.N., prof., retsenzent; DANILEVSKIY, A.S., inzh.,
retsenzent; KUPERSHCHIDT, L., red.

[Technology of construction] Tekhnologiya stroitel'nogo
proizvodstva. [By V.I.Sizov i dr. Moskva, Vysshaya shkola,
1964. 613 p. (MIRA 19:1)

SHVIDENKO, Ya. [Shvydenko, IA.]

Fire recovers oil. Znan. ta pratsia no.1:22-23 Ja '62.
(MIRA 15:1)

(Oil fields--Production methods)

SHVIDENKO, Ya. [Shvydenko, IA.]

The whole world will visit here. Znan-ta pratsia no.4:3-4 Ap 1962
(MIRA 15:4)

(Moscow--Exhibitions)

SHVIDKAYA, G. N.

6733. Karlik, Ye. M. i Shvidkaya, G. N. Proizvodstvo igrushek
iz drevesnykh opilok sposobom goryachego pressovaniya. M., Koiz, 1954
132 s. s. Ill. 22 sm. 3.00 ekz. 4 r. 50 k. -- Bibliogr: s. 129.--
(55-1978) p 688.72 & (016.3)

SO: Knizhnaya Letopis' No. 6, 1955

KOSMA, T.V.; SHVIDKIN, V.V. [Shyvdkin, V.V.]

Peculiarities of the development of deductions by young
school children. Nauk.zap.Nauk.-dosl.inst.psychol. 10:34-60
'59. (MIRA 13:5)

(Reasoning(Psychology))

107-5-37/54

AUTHOR: Shvidkiy, I. (Krasnodar)

TITLE: An Antenna for the "Urozhay" Radio Station
(Antenna dlya radiostantsii "Urozhay")

PERIODICAL: Radio, 1956, Nr5, p. 48 (USSR)

ABSTRACT: A new simple duplex antenna suggested consisting of an L-type antenna or a "slanted span" antenna up to 25 m long and a counterpoise under 5 m long. The station receiver is connected to the same antenna through a 10 to 30-pf capacitor. Reliable range is 50 km during the day, 25 km during the night.

2 figs in the article.

AVAILABLE: Library of Congress

Card 1/1

SHVIDKIY, V.V. [Shvydkiy, V.V.]

Some peculiarities in the understanding of the causal connections
of physical phenomena by pupils of junior grades. Nauk. zap. Nauk.-
dosl. inst. psikhol. 11:73-75 '59. (MIRA 13:11)

1. Institut psikhologii, Kiev.
(Causation)

AUTHORS: Dykhanov, N. N., Shvidko, R. I. 75-1-25/26

TITLE: The Quantitative Determination of Eusintomycin (Kolichestvennoye opredeleniye eusintomitsina)

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1958, Vol 13, Nr 1, pp 148-149 (USSR)

ABSTRACT: Eusintomycin is the stearic acid ester of 1-paranitrophenyl-2-dichloroacetamido-propane-diole(1,3), which is also called sintomycin. It is obtained by the action of technical stearylchloride which contains free stearic acid, thionylchloride, hydrochloric acid and elementary sulfur as impurities, upon a solution of sintomycin in a mixture of dichloroethane and pyridine. In spite of a careful purification of the technical eusintomycin thus produced small admixtures of mineral chlorides, elementary sulfur and free stearic acid are present in the pharmaceutical preparation. There are 2 methods for the quantitative determination of the eusintomycin-content of the pharmaceutical preparation: one of them consists in the determination of the free and the bond stearic acid, in the second method the nitro group of eusintomycin is reduced to

Card 1/4

The Quantitative Determination of Eusintomycin

75-1-25/26

the amino group with zinc and hydrochloric acid, this is then diazotized and the quantity of sodium nitrite consumed on that occasion is converted into the eusintomycin-content. Both methods are complicated and lengthy. For this reason the authors developed another quantitative method of determination of eusintomycin in the pharmaceutical preparation: Eusintomycin is first repeatedly extracted with water and the chloride in the aqueous solution determined by titration according to Volhard. Then eusintomycin is reduced with a Devarda alloy in an alcoholic soda lye. The organically bound chlorine is on that occasion converted into the alkali metal chloride and is, also according to Volhard, quantitatively determined together with the ionogeneously bound chlorine. The difference of the two determinations yields the chlorine-content of eusintomycin. From this the percentage content of eusintomycin in the pharmaceutical preparation can be determined. The quantities of the impurities can be determined according to known methods. During the elaboration of this method of determination it was found that stearic acid which is contained in the reduction products of eusintomycin disturbs the titration, because, as a surface-active substance, it promotes the formation

Card 2/4

The Quantitative Determination of Eusintomycin

75-1-25/26

of stable suspensions of silver chloride and silver thiocyanate. In order to exclude this error, chloroform is added in titration. This brings about a rapid coagulation of the abovementioned silver salts, whereby a clarification of the solution to be titrated occurs. It was further noticed that colored reduction products of eusintomycin also disturb the titration. For its destruction hydrogen peroxide was added to the reaction solution. For the decomposition of the excess peroxide the authors used ferrosulfate. The test results showed that the reduction of eusintomycin with a Devarda alloy takes place quantitatively. Deviations in parallel tests did not exceed 1 %. In order to attain a complete reduction, 4 parts by weight of Devarda alloy on 1 part by weight of eusintomycin are necessary in the case of a reaction time of 30 minutes. This new method for the quantitative determination of eusintomycin as compared to the already known methods is distinguished by the fact that besides simplicity and shortness of the performance it is of a satisfactory accuracy. It can be successfully used for the production control of eusintomycin. Then follows an experimental part in which the exact course of the analysis is described.

Card 3/4

75-1-25/26

There are 3 references, 1 of which is Slavic.

ASSOCIATION: The Moscow "Akrikhin" Pharmaceutical Chemicals Plant
(Moskovskiy khimfarmzavod "Akrikhin")

SUBMITTED: September 17, 1956

AVAILABLE: Library of Congress

Card 4/4	1. Eusintomycin - Determination quantitative analysis	2. Eusintomycin -
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GAVRIKOV, N.A., kand.med.nauk; LUK'YANOV, V.S.; SHVIDKOVSKIY, N.F.

Experience gained in the operation of an interdistrict medical society.
Zdrav. Ros. Feder. 6 no.4:32-33 Ap '62. (MIRA 15'4)

1. Iz Nauchno-mediitsinskogo obshchestva pri Armavirskom gorodskom
otdele zdravookhraneniya (zav. gorodskim otdelom zdravookhraneniya
V.S.Kurochkin).

(KRASNODAR KRAY--MEDICAL SOCIETIES)

GAVRIKOV, N.A., kand.med.nauk; SHVIDKOVSKIY, E.F. (Armavir)

Clinical aspects and diagnosis of primary tumors of the pleura.
Klin.med. 40 no.6:147-151 Je '62. (MIRA 15:9)

1. Iz terapevticheskogo otdeleniya (zav. - kand.med.nauk N.A.
~~Gavrikov~~) Ob'yedinennoy bol'nitsy No.3 (glavnyy vrach L.I.
Baskakov).

(PLEURA--TUMORS)

GAVRIKOV, N.A., kand.med.nauk; KUROCHKIN, V.S.; LUK'YANOV, V.S.;
SHVIDKOVSKIY, N.F. (Armavir)

Formation and coordination of the activity of the individual
interdistrict scientific medical societies. Sov.zdrav. 22
no.4:103-104 '63. (MIRA 16:4)
(ARMAVIR--MEDICAL SOCIETIES)

GAVRIKOV, N.A., kand.med.nauk (Armavir); LUK'YANOV, V.S. (Armavir);
SHVIDKOVSKIY, N.F. (Armavir)

Acupuncture in the clinic for internal disease. Vrach.delo no.1:
145-146 Ja '63. (MIRA 16:2)
(ACUPUNCTURE)

GAVRIKOV, N.A., kand.med.nauk (Armavir); SHVIDKOVSKIY, N.F. (Armavir);
LUK'YANOV, V.S. (Armavir).

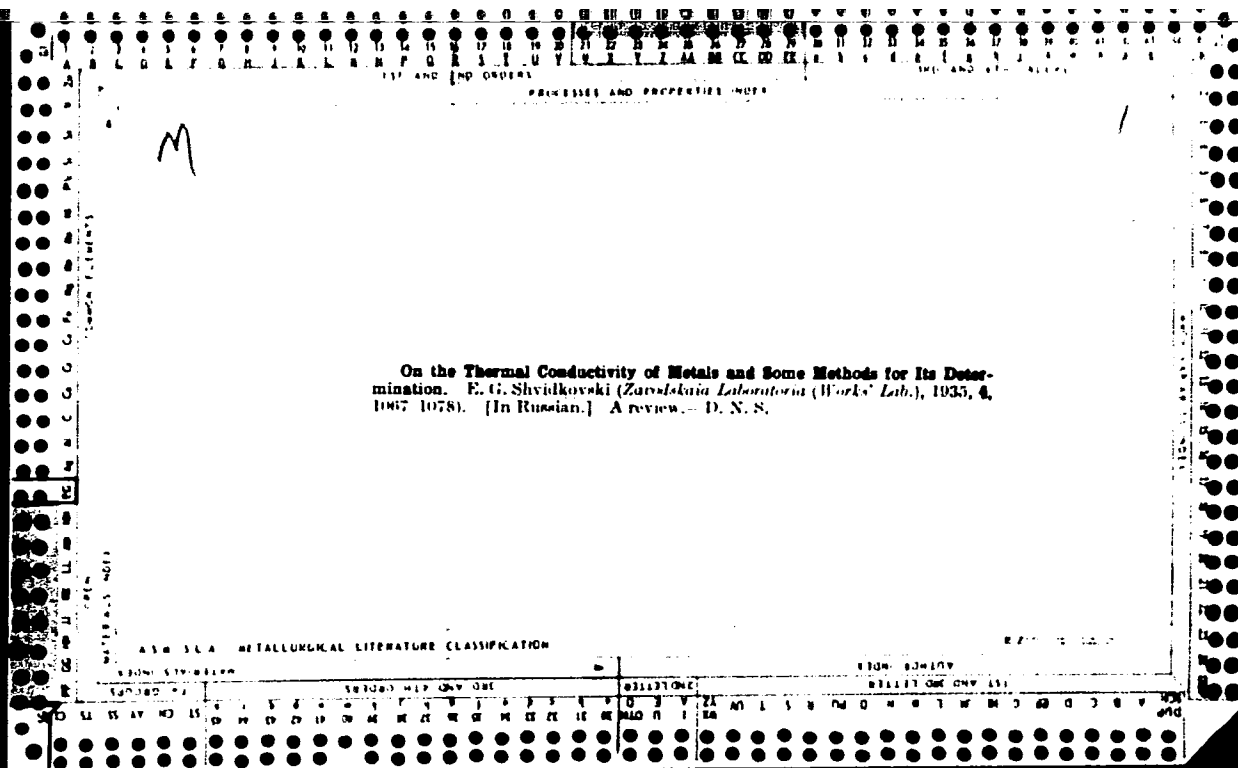
Segmentary ultraviolet irradiation of the reflexogenic zones
in treating bronchial asthma. Vrach. delo no.1:147-148 Ja'64
(MIRA 17:3)

CP

9

A method for studying the thermal expansion of steels
V. A. Tretskii and E. G. Shvilkovskii. *Zavodskaya Lab.*
3, 1012-1014 (1934). The preliminary communication is
confined to a review of the existing methods with over 40
literature references and a brief description of a proposed
simplified dilatometer (illustrated). Chas. Blanc

ASH 51.4 METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND QUARTS										3RD AND 4TH QUARTS									
PROCESSING AND PROPERTIES INDEX																			
<div style="display: flex; justify-content: space-between;"> Ca 2 </div> <p>Measurement of the thermal conductivity of metals by the method of Angström. E. G. Shvidkovskii. <i>J. Tech. Phys.</i> (U. S. S. R.) 6, 635-47 (1935); <i>Chem. Zvest.</i> 1939, II, 1840.—After a general review of the heat capacity and thermal cond. of alloys that undergo changes in phase, the theory of the method of Angström and the exptl. procedure are discussed, as is also the value of the temp. curves obtained. Practical data. of the thermal cond. were made on Sn between 25° and 190°, on Pb between 45° and 200°, and on steel between 55° and 200°. With Sn the curve showing the relation between the thermal cond. (eq. cm./sec.) and the temp. was linear up to a temp. of 200°, therefore slightly below the m. p. With Pb variations from the linear occurred; for steel these variations were somewhat more pronounced. It appears to be possible to extend the range of temp. measurements by the use of Ph₂NH and Hg as heating liquids.</p> <p style="text-align: right;">M. G. Moore</p>																			
<div style="display: flex; justify-content: space-between;"> <div> <p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>1ST AND 2ND QUARTS</p> <p>3RD AND 4TH QUARTS</p> </div> <div> <p>1ST AND 2ND QUARTS</p> <p>3RD AND 4TH QUARTS</p> </div> </div>																			

7

C 4

Processes and Properties: Steel

Viscosity of molten steel. E. G. Shvilkovskii, K. G. Akhmetzhanov, A. G. Belyankin, and P. T. Shishpanov. *Akad. Nauk S.S.R., Otdel. Tekh. Nauk, Inst. Mashinostroyeniya, Sposoby i Voprosy Zhidkosti i Kollid. Rastvorov (Cont. on Viscosity of Liquids and Colloidal Solns.)* 3, 7-8(1941)(Pub. 1945); *Trudy Inst. Fiz. Mosk. Gosudarst. Univ.* 1, No. 2 (1941). — The viscosity of several steels (molten) was studied at 1600-20°. The theory of the app. is described in v. II of this publication. (Cf. also C.A. 39, 2673P.) The investigated steels had a kinematic viscosity of 5.10^{-4} – 8.10^{-4} . M. Hosh

ASME-STEEL METALLURGICAL LITERATURE CLASSIFICATION

SECTION	SUBSECTION	SECTION	SUBSECTION
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
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100	100	100	100

PROCEDURES AND PROPERTIES INDEX																									
<p>CA</p> <p>A study of liquid viscosity. K. U. Shvidkovskii, <i>Uchenye Zapiski, Kazanskogo Universiteta, Seriya Fiziko-Matematicheskie Nauki</i>, 1944, 36, 155-56 (1944).—A cylinder is filled with a liquid, suspended on a vertical torsion wire, and is made to oscillate about its vertical axis. The decrement of these oscillations depends on the viscosity of the liquid. An equation is derived for this dependence. J. J. Bikerman</p>																									
<p>ASTM-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>FROM SOURCE</p> <p>DELETED ONE ONLY LIST</p>																									

Viscosity of molten steel. F. G. Shvdkovskii, K. G. Akhmetzyanov, A. G. Belyankin, and P. I. Shushpanov. *Uchenye Zapiski, Moskovskogo Ordinatsionnogo Universiteta*, 1967, No. 1, p. 107.

M. V. Lomonosov, *Fizika* 74, 145 (1914). A Meyer viscometer (C.A. 39, 2674) was used. The crucible (cylinder) was of Al_2O_3 and the furnace filled with a mix of CO and CO_2 ; the C content of the steel did not change during an expt. The following values ($\times 10^3$) were found for the kinematic viscosity: steel "E" (C 1.0, Si 0.35, Mn 0.30, S 0.030, P 0.010%) 6.90 at 1620, 5.52 at 1540; "1010" (C 0.10, Si 0.01, Mn 0.17, S 0.025, P 0.030, Ni 0.05, Cr 0.01%) 5.7 at 1490, 3.9 at 1655; "EKH1M" (C 0.30, Si 0.19, Mn 0.65, S 0.004, P 0.015, Ni 0.12, Cr 1.26, Mo 0.18) 5.91 at 1590, 5.42 at 1505; "EY4ZS" (C 0.10, Si 2.52, Mn 0.67, S 0.012, P 0.011, Ni 20.47, Cr 17.30%) 6.21 at 1465, 3.56 at 1650; "EKH 12" (C 2.10, Si 0.24, Mn 0.19, S 0.015, P 0.021, Ni 0.30, Cr 11.75%) 7.70 at 1425, 6.60 at 1585; "ShKh 12" (C 1.05, Si 0.23, Mn 0.42, S 0.014, P 0.022, Ni 0.03, Cr 1.63) 5.90 at 1488, 5.51 at 1604; and "1015" (C 0.10, Si 0.31, Mn 0.05, S 0.020, P 0.012, Ni 0.07, Cr 0.18%) 7.41 at 1481, 5.17 at 1647.

I. I. Bykerman

B

3

388. On the Theory of Continuous Casting. A. N. Tikhonov and E. G. Shvidkovskii. 29 pages. Henry Brucher, Altadena, Calif. (Translation No. 2008.) From *Journal of Technical Physics* (U.S.S.R.), v. 17, no. 2, 1947, p. 161-176.

Presents a theoretical calculation of the position of the crystallization front separating the liquid metal from the solid at a constant rate of withdrawal of the ingot cast, and an analysis of physical factors determining the shape of the front of crystallization.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

RELATIONS

1ST AND 2ND CIPHERS

3RD AND 4TH CIPHERS

5TH AND 6TH CIPHERS

7TH AND 8TH CIPHERS

9TH AND 10TH CIPHERS

11TH AND 12TH CIPHERS

13TH AND 14TH CIPHERS

15TH AND 16TH CIPHERS

17TH AND 18TH CIPHERS

19TH AND 20TH CIPHERS

21ST AND 22ND CIPHERS

23RD AND 24TH CIPHERS

25TH AND 26TH CIPHERS

27TH AND 28TH CIPHERS

29TH AND 30TH CIPHERS

31ST AND 32ND CIPHERS

33RD AND 34TH CIPHERS

35TH AND 36TH CIPHERS

37TH AND 38TH CIPHERS

39TH AND 40TH CIPHERS

41ST AND 42ND CIPHERS

43RD AND 44TH CIPHERS

45TH AND 46TH CIPHERS

47TH AND 48TH CIPHERS

49TH AND 50TH CIPHERS

51ST AND 52ND CIPHERS

53RD AND 54TH CIPHERS

55TH AND 56TH CIPHERS

57TH AND 58TH CIPHERS

59TH AND 60TH CIPHERS

61ST AND 62ND CIPHERS

63RD AND 64TH CIPHERS

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67TH AND 68TH CIPHERS

69TH AND 70TH CIPHERS

71ST AND 72ND CIPHERS

73RD AND 74TH CIPHERS

75TH AND 76TH CIPHERS

77TH AND 78TH CIPHERS

79TH AND 80TH CIPHERS

81ST AND 82ND CIPHERS

83RD AND 84TH CIPHERS

85TH AND 86TH CIPHERS

87TH AND 88TH CIPHERS

89TH AND 90TH CIPHERS

91ST AND 92ND CIPHERS

93RD AND 94TH CIPHERS

95TH AND 96TH CIPHERS

97TH AND 98TH CIPHERS

99TH AND 100TH CIPHERS

1. BUKHAROV, A. . .; SHVIDENSKIY, YE. S.
2. USSR 600
4. Physics - Philosophy
7. Law of interconnection between mass and energy; against the idealistic distortions in the interpretation of the rule $E=mc^2$. Usp. fiz. nauk, 48, No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

Shvidkovskiy, Ye. G.

Sep 53

USSR/Physics - Viscosity Lag

"The Viscosity of Supercooled Tin," Ye. G. Shvidkovskiy and G. I. Goryaga, Chair of Molecular and Thermal Phenomena

Vest Mos Univ, Ser Fizikomati i Yest Nauk, No 6, pp 63, 64

Note that at low temps (200-300°C) a remarkable divergence exists among the values of tin's viscosity obtained during the cooling process (800-200°C). Conclude that the supercooling of a metallic liquid is accompanied by a marked decrease

275T102

in its viscosity relative to the non-supercooled state and that the observed lag during the cooling process begins from 60-70°C to tin's temp of crystallization (around 300°C). State that x-ray analysis shows the supercooling phenomenon to be due to the development of liquid-phase domains with ordering according to the coordination type close to that observed in the solid phase.

SHVIDKOVSKIY, Ye. G.

Viscosity of bismuth-tin alloys. Ye. G. Shvidkovskii and
G. I. Goryunov (Moscow Univ. Vestnik Mosk. Univ.
8, No. 10, Ser. Fiz.-mat. i Estestv. Nauk No. 7, 1250
(1953)). The kinematic viscosity of Bi-Sn alloys was measured with the rotating-fluctuating viscosimeter previously described by Sh. (ibid., No. 12 (1950)). During the 60- to 80-hr. tests the alloys were prevented from oxidizing by a vacuum of $(5.5 \text{ to } 9) \times 10^{-3}$ mm. of Hg. Temps. were measured with a thermocouple or with a Hg or Ga thermometer. The mass of alloys contg. 40-44 to 100% Bi changed after. The mass of condensation on the lid of the during a test because of condensation on the lid of the crucible in the vertical temp. gradient. A correction for this fact was calcd. to be about 2%. The probable error of a single measurement was estd. to be 1.5 to 2%. The measurements were made with the same graphite crucible. A duplicate run for Sn in an Armco iron crucible gave good agreement. Data were obtained on 10 alloys covering the whole compn. range of the system and from about the liquidus temp. to about 700°. Plots of isothermal viscosity in the range 300 to 700° had a similar form. At 700° the viscosity at 0% Sn was 0.1 centistoke, it increased to 1.2 at 20% Sn, then it increased more slowly and reached 1.4 at 100% Sn. At 300° the value at 0% Sn was 1.8. At 250° the viscosity fell from 0.3 at 10% Sn to a min. of 2.1 at 28%, rose to 2.6 at 71%, fell to 2.4 at 80%, and rose to 2.9 at 100%. The max. deviation of the viscosity from the additivity rule at temps. above 300° did not exceed 10%. The isotherms suggested the presence in the liquid of the following compds.: Sn_3Bi and possible SnBi , only at low temps.; also, Sn_2Bi and SnBi which remained at high temps.

A. G. Guy

SHVIDKOVSKIY, Ye. G.

Nov 53

USSR/Physics - Solid State Physics

"Conference on the Liquid State of Matter, Held 28-30 May 1953 at Kiev by the Academy of Sciences, Ukrainian SSR, and Kiev State University in T. G. Shevchenko," S. D. Ravikovich, G. F. Poshchina and A. F. Skryshevskiy

Usp Fiz Nauk, Vol 51, No 3, pp 393-405

Summarize reports by the following: V. I. Danilov, on scattering of x-rays in liquids; A. F. Skryshevskiy, on x-ray study of solns of KOH, NaOH, LiOH, LiCl, and H_2SO_4 ; Ye. A. Toray-Koshits, on integral analysis of intensity curves; E. V. Deragin, Ye. G. Shvidkovskiy, C. Ya. Samoylov et al. on x-ray studies of liquid structure; A. Z. Golik, on characteristics of molecular structure of liquids; I. V. Radchenko, on modeling of liquids; P. K. Shestakovich, on new liquid models and influence of central and dipole forces on close ordering; A. Z. Golik and his associates S. D. Ravikovich, A. V. Orishchenko, V. I. Solomko, and N. A. Ryndich, on viscosity and density of matter in the liquid state; V. M. Chulanovskiy and D. S. Karenetskaya, on the influence of molecules' size and the intermolecular intensity on viscosity coeff; A. P. Frynza, on thermo-diffusion in binary systems; S. S. Urazovskiy, presence of grouping of identical atoms; A. R. Fegel', on relation between electrical properties and structure of liquids; K. F. Vuks, on light-dispersion method for studying liquids' structure.

USSR/Physics - Viscosity of molten metal

FD-1244

Card 1/1 : Pub. 129-6/25

Author : Shvidkovskiy, Ye. G., and Priss, L. S.

Title : Viscosity of molten metals and A. I. Bachinskiy's formula.

Periodical : Vest. Mosk. un., Ser. fizikomat. 1 yest. nauk, 9, No 1, 57-60, Feb 1954

Abstract : Gives the results of experiments on technically pure bismuth and lead. Obtains graphs showing the kinematic viscosity, in centislokes, as a function of temperature and relative density. Probable error was 3%. Twelve references, including 3 foreign.

Institution : Chair of Molecular and Thermal Phenomena

Submitted : April 2, 1953

SHVIDKOVSKIY, Yevgeniy Georgiyevich; TKACHUK, S.G., redaktor; ZHABOTIN-
SKIY, Ye.Ye., redaktor; AKHLAMOV, S.N., tekhnicheskiy redaktor

[Some problems in the viscosity of molten metals] Nekotorye vop-
rosy viazkosti rasplavlennykh metallov. Moskva, Gos.izd-vo tekhnii-
ko-teoret. lit-ry, 1955. 206 p. (MIRA 9:3)
(Metals--Testing)

SHVIDKOVSKIY, Ye. G.

"The Influence of Insoluble Admixtures on the Viscosity of Metallic Liquids",
a paper presented at the second conference on the Liquid State of Matter, Kiev,
30 May to 3 June 1955, Usp. Fiz. Nauk, April 1955

IVERONOVA, V.I., prof.; SHVIDKOVSKIY, Ye.G., prof. otv.red.

[Program in general physics; for the Physics Faculty] Programma po
obshchei fizike (dlia fizicheskogo fakul'teta). 1956. 7 p.
(MIRA 11:3)

1. Moscow.. Universitet.
(Phycis--Study and teaching)

SOV/124-58-4-4349

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 4, p 94 (USSR)

AUTHORS: Goryaga, G. I., Shvidkovskiy, Ye. G.

TITLE: Viscosity Hysteresis in Molten Metals (Gisterezis vyazkosti rasplavlennykh metallov)

PERIODICAL: Vestn. Mosk. un-ta. Ser. matem., mekhan., astron., fiz., khimii, 1956, Nr 2, pp 71-76

ABSTRACT: An investigation of the viscosity of tin-bismuth alloy and pure tin was performed with the aid of a rotation-type viscosimeter. It was found that the viscosity of molten metals containing insoluble admixtures exhibits hysteresis. Molten metals that have been purified of such admixtures by filtration in vacuum do not exhibit any viscosity hysteresis. The explanation of these phenomena is given as follows: The insoluble admixtures retard the process of re-coordination of the atoms (and, consequently, the change of viscosity) during which the atoms pass from the low-temperature packing to the high-temperature packing.

Card 1/1

1. Liquid metals--Viscosity
2. Hysteresis--Theory
3. Liquid metals--Temperature factors

A. I. Golubev

SHVIDKOVSKIY, Ye. G.

USSR/Statistical Physics - Liquids

D-8

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11518

Author : Goryaga, G.I., Shvidkovskiy, Ye.G.

Inst :

Title : Influence of Insoluble Impurities on the Viscosity of Molten Metals Upon Supercooling.

Orig Pub : Vestn. Mosk. un-ta, 1956, No 6, 33-37

Abstract : The authors have previously observed (Referat Zhur Fizika, 1955, 8988), the "branching" of the curve for the temperature dependence of the viscosity of liquid tin, preceding the supercooling of the tin. This phenomenon was investigated in detail with tin and silicon. Particular attention was paid to the influence of the insoluble impurities contained in the specimens (oxides) and the removal upon purification on this effect. The results obtained permit the authors to suggest that even negligible impurities exert a delaying influence on the transformations of

Card 1/2

ALEKSEYEV, P.P.; BESYADOVSKIY, Ye.A.; GOLYSHEV, G.I.; IZAKOV, M.N.; KASATKIN, A.M.; KOKIN, G.A.; LIVSHCHITS, N.S.; MASANOVA, N.D.; SHVIDKOVSKIY, Ye.G.

Rocket exploration of the atmosphere. Meteor. i gidrol. no.8:3-13
Ag '57. (MIRA 10:8)
(Atmosphere, Upper) (Rockets in meteorology)

AUTHOR

DANILIN, B.S., MIKHNEVICH, V.V., REPNEV, A.I.,
SHVIDKOVSKIY, Ye.G.

53-1b-14/18

TITLE

The Problem of Measuring Pressure and Density of the High
Layers of the Atmosphere by Means of an Artificial Earth Satellite.
(Zadacha izmereniya davleniya i plotnosti vysokikh sloev
atmosfery s pomoshch'yu ikkussivennogo sputnika zemli.
Russian)

PERIODICAL

Uspekhi Fiz. Nauk 1957, Vol 63, Nr 1b, pp 205-225 (USSR)

ABSTRACT

By the instrument for the measuring of pressure and density
the authors here understand a "manometer" of any suitable
type (e.g. an ionization manometer or an omegotron).
First the authors discuss the various models of the upper
atmosphere. According to the authors the models MITRA and
NICOLET are the nearest approach to reality. A table gives
values of concentration and pressure which correspond
to various models of the atmosphere. For further precise
determination of these data tests with rockets and artificial
satellites are suitable. In investigations of this kind
various problems arise with regard to the interaction of
a rapidly flying body and a diluted gas. The authors here
study some of these problems. First the authors discuss
the currents of particles, the momenta and the energies
for the case of a homogeneous gas. From 200 km upward

CARD 1/5

specular reflection of the molecules ($f = 0$), the frontal
pressure on the surface of the satellite is $P \sim 10^2 P$,
which means that it exceeds the pressure in the free
atmosphere by two orders of magnitude. The tangential
pressure on the lateral plane surface of the moving body
will amount to zero in the case of specular reflection.

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001550410020-3"

CARD 2/5

The Problem of Measuring Pressure and Density of the High Layers of the Atmosphere by Means of an Artificial Earth Satellites.

53-1b-14/18

Accommodation can be introduced: Like in the case of gas dynamics, a slowing down temperature of the gas whose progressing power was consumed by its being heated. During interaction with the screen the energy can newly distribute over the degrees of freedom. Part of the energy of the progressive movement of the molecules can transform itself into revolution energy and oscillation energy. The measurements of the coefficients of accommodation indicate the following: This coefficient depends on the kind of gas, on the temperature of the gas, on the temperature and the form of the surface and on the presence of admixtures. The accommodation coefficients of the degrees of freedom of the progressive motion and the freedom degrees of rotation are almost equal.

The equilibrium pressure in the cavity of the manometer:
The consideration of the properties of the free molecular flow carried out here permits the establishment of a relation between the pressure and the number of particles

CARD 3/5

The Problem of Measuring Pressure and Density of the High Layers of the Atmosphere by Means of an Artificial Earth Satellite.

62-15-14/18

in the unit of volume in the cavity of the manometer and the corresponding parameters of the surrounding medium. The authors here calculate the most simple case: The cavity of the manometer is connected with the atmosphere by a diaphragm with the radius r . The recordings of the manometer are rather difficult to interpret. If a rather long tube is placed between the cavity of the manometer and outside atmosphere, the pressure within the manometer must rise. Something is also said about the time constant of the manometer; under the test conditions assumed here it is of a magnitude of 2.10^{-3} sec.

Some problems connected with the measurement of pressure:
The authors here shortly discuss the following problems: ionization by impact, "dissociation by impact", the separation of gas, the electric charge of the satellite, the knocking out of atoms from the surface of the satellite, the natural ionization of the atmosphere, photoemission. Finally the apparatus is discussed on the basis of a drawing. Along the axis of a cylindrical lattice a thin

CARD 4/5

SHVETSKIIY, Yr. G.

"Viscosity Properties of Molten Metals."

Hydrodynamics of Molten Metals (Gidrodinamika rasplavlennykh metalov; trudy pervogo soveshchaniia po teorii liteinykh protsessov. Moskva, Izd-vo Akad. nauk SSSR, 1958, 257 pp.

(Proceedings of the First Conference on the Theory of Casting Processes)

Moscow State University imeni "M. V. Lomonosov"

SHVIDKOVSKIY, Ye.G.

Some results of measurements of stratosphere thermodynamic
parameters by meteorological rockets. Isk.sput.Zen. no.2:
10-16 '58. (MIRA 12:5)
(Atmosphere, Upper--Rocket observations)

24(6)

AUTHORS: Shvidkovskiy, Ye.G., Durgaryan, A.A., SOV/155-58-5-29/37
Tyapunina, N.A.

TITLE: On the Internal Friction in Plastically Deformed Crystals

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye
nauki, 1958, Nr 5, pp 172-176 (USSR)

ABSTRACT: The authors try to explain the maximum of internal friction
observed in [Ref 1,2,3] for plastically deformed poly-
crystals of Cu and Cd. For this purpose they investigate in
parallel the internal friction and the metallographic
structure of Cu and Cd. The investigation of the crystals
in the initial state in which the student A.A. Aldushin
participated, showed a dependence of the internal friction on
the granulation of the polycrystals. For plastically deformed
crystals the internal friction increases with increasing de-
gree of deformation, attains a maximum and then becomes
smaller again. Position and magnitude of the maximum depend
weakly on the initial state. Further experiments show that the
maximum occurring for plastic deformations is neither connected
with the variation of the granulation nor with the appearances

Card 1/2

29

On the Internal Friction in Plastically
Deformed Crystals

SOV/155-58-5-29/37

on the surface of the crystal grains. It is conjectured that the formation of the maximum of internal friction for crystals which have been subjected before to a plastic deformation is probably connected with the formation of sliding strips in the crystal grains.

There are 6 figures, and 6 references, 2 of which are Soviet, 3 American, and 1 Japanese.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
(Moscow State University imeni M.V. Lomonosov)

SUBMITTED: June 28, 1958



Card 2/2

35

~~48(7)~~ 18.8200

66826

AUTHORS: Shvidkovskiy, Ye.G., Durgaryan, A.A. SOV/155-58-5-36/37

TITLE: ~~The Dependence of Internal Friction and of the Young Modulus of Some Metals on the Temperature~~

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskoye nauki, 1958, Nr 5, pp 211 - 216 (USSR)

ABSTRACT: According to the resonance method of Cooke [Ref 1] there was measured among others the dependence of internal friction and of the elasticity modulus on the temperature for Bi, Sn, Cd, Zn and Pb. The measurements were carried out under a pressure of 10^{-3} mm mercury column. Limits of error for internal friction are $\pm 7 - 9\%$, for the E-modulus $\pm 0.6\%$.

Change of temperature from -60°C to about $+350^{\circ}\text{C}$. The authors propose $\frac{H}{RT}$ to approximate the internal friction by

$\text{tg } \delta = A(T)e^{-\frac{H}{RT}}$ in the range of high temperatures, where H is the activation energy, so that for weakly variable A(T)

the value $\ln \text{tg } \delta$ depends linearly on $\frac{1}{T}$ which is actually

Card 1/2

36

18(7)

AUTHORS: Shvidkovskiy, Ye.G., Durgaryan, A.A. SOV/155-58-5-37/37

TITLE: The Dependence of Internal Friction and of the Elasticity Modulus of Some Metals on the Amplitude of Oscillation and on a Preceding Cold Treatment

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1958, Nr 5, pp 217-222 (USSR)

ABSTRACT: In the frequency interval 40 - 120 kHz there was measured the dependence of internal friction and of the E-modulus on the temperature for mono- and polycrystals of Cd and Sn, for monocrystals of Bi, polycrystals of Zn and electrolytic Cu. All the measurements were carried out one hour after the preceding torsion. The dependences obtained are non-linear ; for Cu there occur hysteresis phenomena ; the variations of internal friction and of the E-modulus partially take place in opposite direction. Monocrystals as well as polycrystals show maxima on the curve friction - temperature, the position of which depends on the preceding plastic

Card 1/2

IVANOVSKIY, Andrey Ivanovich; SHVIDKOVSKIY, Ye.G., doktor fiziko-matemat..
red.; BLINNIKOV, L.V., red.; ZARKH, I.M., tekhn.red.

[Theoretical and experimental study of sound-induced currents]
Teoreticheskoe i eksperimental'noe izuchenie potokov, vyzvannykh
zvukom. Pod red. E.G.Shvidkovskogo. Moskva, Gidrometeor.izd-vo
(otdelenie), 1959. 113 p. (MIRA 12:12)
(Sound)

SHVIDKOVSKIY, Ye.G.

Rocket observations of the upper atmosphere. Trudy TSAO no.26:
65-73 '59. (MIRA 12:5)
(Atmosphere, Upper--Rocket observations)

18.7520

86706
S/180/60/000/006/026/030
E021/E335

AUTHORS: Rakova, N.K. and Shvidkovskiy, Ye.G. (Moscow)

TITLE: Crystallisation of Tin from the Supercooled State

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye
tekhnicheskikh nauk, Metallurgiya i toplivo,
1960, No. 6, pp. 137 - 142

TEXT: Chemically pure tin was used in the investigation. The transition from the supercooled to the solid state was followed by measuring electrical resistance. It was measured by a method proposed by Goryaga (Ref. 1). A graphite crucible was filled with metal and placed in a glass flask connected to a vacuum pump (Fig. 1). The crucible was heated until the metal reached 20 - 30 °C above the melting point. It was then slowly cooled. Two rates were employed - 0.4 and 6 °C/min. Fig. 2a is a typical record of the resistance of the sample against time. There is first a sharp change in resistance corresponding to a high rate of increase in the mass of the solid phase, and then a very slow change in resistance to the value corresponding to a solid sample. The first period

Card 1/3

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S/180/60/000/006/026/030
E021/E335

Crystallisation of Tin from the Supercooled State

lasted 0.5 - 3 seconds and the second period several minutes. Fig. 4 shows a similar curve for the change in resistance and also a curve for the change in temperature at the walls of the crucible. There was a sharp increase in temperature when the resistance dropped, corresponding to the initial crystallisation. From the results, the quantity of tin crystallising was calculated assuming that solidification began at the walls of the crucible. Fig. 2b shows M_s/M against time where M_s is the mass of solidified material and M is the total mass of the sample. The quantity crystallising in the first rapid period depends on the dimensions of the crucible. For a small crucible it was 12 - 47%, and for a large crucible 9 - 18% of the initial material. Fig. 7 shows the relation between the rate of solidification and time. Fig. 7a is for solidification in a graphite crucible and

Card 2/3

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E021/E335

Crystallisation of Tin from the Supercooled State

Fig. 7b in a similar crucible with a thermocouple immersed in the liquid metal. Curve 1 in Fig. 7a and Curve 2 in Fig. 7b relate to the same degree of initial supercooling. The mean rate of solidification in the first period dropped from 57 to 7% per second when a thermocouple was inserted. The reason for this change when a foreign body was added is not clear. There are 7 figures and 3 Soviet references.

SUBMITTED: August 26, 1960

Card 3/3

PHASE I BOOK EXPLOITATION SOV/5689

Tsentral'naya aerologicheskaya observatoriya.

Trudy (Central Aerological Observatory. Transactions) No. 29.
Moscow, Gidrometeoizdat, 1960. 86 p. 875 copies printed.

Sponsoring Agency: Glavnoye upravleniye gidrometeorologicheskoy
sluzhby pri Sovete Ministrov SSSR.

Ed. (Title page): Ye. G. Shvidkovskiy; Ed.: L. V. Blinnikov;
Tech. Ed.: I. M. Zarkh.

PURPOSE: The book is intended for physicists and meteorologists
interested in rocket research of the atmosphere; it may also
be useful to graduate students at universities and meteorological
institutes.

COVERAGE: This issue of the Transactions of the Central Aerologi-
cal Observatory contains articles on the physical principles
of rocket research of the atmosphere. Experimental methods

Card 1/3

Central Aerological Observatory

SOV/5689

used in rocket research of the atmosphere for meteorological purposes are analyzed. A brief description of some research rockets and the results obtained through their use are given. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

Foreword	3
<u>Shvidkovskiy, Ye. G.</u> Meteorological Measurements By Means of Rockets	5
Introduction	5
1. Research rockets	9
2. Theoretical premises	16
3. Measurements in the high layers of the atmosphere	33
Ivanovskiy, A. I., and A. I. Repnev. On the Distribution of Density in the Instrument at Free Molecular Flow	51
Card 2/3	

Central Aerological Observatory

SOV/5689

I. Density gradients in tubes moving in rarified gas	51
II. Density gradients in a cavity moving in rarified gas	60
Repnev, A. I. Mass Selection in Tubes Moving in Rarified Gas	66
Kokin, G. A. On Some Problems of the Nonequilibrium State of Gas in the Upper Atmosphere	74
Ivanovskiy, A. I. On Currents Caused by Waves in Magneto-hydrodynamics	84
AVAILABLE: Library of Congress	

Card 3/3

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187530 1145, 1555, 1454

S/180/61/000/003/010/012
E111/E152

AUTHORS: Glazov, V.M., Vertman, A.A., and Shvidkovskiy, Ye.G.
(Moscow)

TITLE: Contribution to the summary of a discussion on the
structure and properties of liquid alloys

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1961, No.3, pp.104-115

TEXT: This article relates to one which appeared in No.6 of
this journal, 1960. The authors state that a number of important
questions remain to be clearly answered in the field of liquid-
metal structures, particularly: 1) for which systems and to what
extent does the nature of particle interaction forces change during
transition from the solid to the liquid state; 2) how is liquid
structure linked with that of the original crystal and to what
temperature does the link persist; 3) what is the structural unit
of various liquids; 4) can a model of liquid structure be found
as universal as the crystal lattice for solids; 5) to what extent
can properties of the crystallized material be influenced in a
given way through the liquid. What is needed is a theory of
Card 1/7

22982

Contribution to the summary of a S/180/61/000/003/010/012
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the liquid state embodying the molecular-kinetic theory of phase transition. In the present survey the authors set out to express some definite ideas on the required research programme. They have all made their own contributions (e.g. Ref.10: Ye.G.Shvidkovskiy, N.N. Rakova, Tam Zhe. Ref.12: V.M. Glazov, present journal, No.6, 1960; Ref.15: A.A. Vertman, A.M. Samarin, DAN SSSR, 1960, 134, No.2). Basic ideas (Ref.1: Ya.I. Frenkel', Sobraniye trudov, 3, Akademizdat, 1959. Ref.2: N.N. Bogolyubov, Gostekhizdat, 1946. Ref.3: I.Z. Fisher, Fizmatgiz, 1961), must be developed and extended. Diffraction methods (Ref.14: T.A. Kontorova, present journal, 1961, No.3) must be developed and supplemented by new methods. Molecular vapours of liquids could give indications of liquid structural units and crystallization, especially of super-cooled liquids, should also be studied. A systematic study is needed of electrical properties, which shed light both on changes in inter-particle forces and in structure on crystallization and melting. An attempt to link the liquid coordination number and its change on heating with the electronic structure of the atom (Ref.7: V.K. Grigorovich, Tam Zhe, 1960, No.6) is an interesting supplement to earlier ideas which are in agreement with those of Card 2/7

22982

Contribution to the summary of a S/180/61/000/003/010/012
E111/E152

Bernal (Ref.8: Scientific American, 1960, 203, No.2). The existence of directed inter-atomic bonds complicates the picture obtained. Three cases of liquid structure have been recognized (Ref.3; and Ref.9: I.Z. Fisher, present journal, 1960, No.6) in an approach based on the idea of disturbance of the "original lattice" by thermal vibrations. A study of crystallization of supercooled tin by electrical conductivity measurement indicates the absence of any simple and obvious link between the number of crystallization centres formed and the final distance (Ref.10). Fruitful results, e.g. for germanium (Ref.12) have been obtained from a method based on changes of structure-sensitive properties with temperature. "Oriented fusion" is another view of the mechanism of metallization of the bond on fusion of germanium and silicon (Ref.13: T.A. Kontorova, FTT, 1959, V.1, No.11, 1761. Ref.14). There is some evidence of increase in the coordination number of iron on heating (Ref.15) and the possibility of polymorphic transformations has been considered (Ref.16: Yu.A. Klyachko, present journal, 1960, No.6. Ref.17: S.S. Urazovskiy, Izd. AN Ukr.SSR, 1956. Ref.18: S.F. Khokhlov, present journal, 1960, No.6). An interesting approach is the comparison of experimentally determined heats of
Card 3/7

22982

Contribution to the summary of a S/180/61/000/003/010/012
E111/E152

fusion of silicides with those calculated by an approximate equation for a type A_mB_n intermetallide (or from entropies of fusion) (Gel'd, P.V., Korshunov, V.A., and Petrushevskiy, M.S., Tam Zhe, Ref.19; Gel'd, P.V., and Kocherov, P.V., Tam Zhe, Ref.20). A "geometrical" approach to liquid structure based on structural crystallography has also been made (Ref.18). Fedorov's theory of space groups can be used in connection with the possibility of formation of quasi-compounds with a structure which in general has no analogues in the solid state (e.g. Refs. 21: M.I.Shakhparonov, Tam Zhe, 1961, No.3; Ref.5; O.Ya. Samoylov, Izd. AN SSSR, 1957; Ref.22: V.M. Glazov, S.N. Chizhevskaya, Tam Zhe, 1961, No.3). Mass spectroscopy of vapours and study of condensate structures has shown the possibility of polyatomic formation in the vapour (Ref.23: G.M. Martynkevich, Tam Zhe, 1960, No.6). At near-liquidus temperatures, the discussion showed, there is a close-order structure which is generally only qualitatively related to the phase diagram. For classifying liquids the energy of inter-particle interaction or some related value should be used. Deviations from ideal-solution laws are a possible index (Ref.24: Yesin, Yu.A., Sryvalin, I.T., Tam Zhe), as are composition versus

Card 4/7

22982

Contribution to the summary of a S/180/61/000/003/010/012
E111/E152

property curves. The latter has been used for a system of classification (Ref.25: F.Zauerval'd, Tam Zhe, 1961, No.3) which is only partially successful, and Kurnakov's system (Ref.26: N.S. Kurnakov, Izd. AN SSSR, 1940) is still useful. With a few exceptions (Ref.27: Yu.A. Nekhendzi, N.G. Girshovich, present journal, 1961, No.3, and Ref.28: A. Grbek, Tam Zhe) the participants in the discussion preferred isotherms to lines of equal superheat. The structure of liquid eutectics was widely discussed, three main points of view being apparent. The first, originated by Danilov (Ref.4: V.I. Danilov, Izd.AN Ukr.SSR, 1956), regards melts of eutectic composition as containing a more or less developed chemical microheterogeneity (Ref.29: A.S. Lashko, A.V. Romanova, Tam Zhe; Ref.30: V.M. Glazov, A.A. Vertman, Izd.AB SSSR, 1960); experimental confirmation is available (Ref.31: A.R. Regel', F. Gaybullayev, ZhTF, 1957, V.27, No.9: Ref.24). The average size of these eutectic colonies is considered to be $10^3 \sim 10^4$ atoms (confirmed in Ref.33: A.A. Vertman, A.M. Samarin, A.M. Yakobson, Tam Zhe) and their composition close to that of the corresponding solid solution (Ref.32: G.M. Bartenev, present journal, 1961 No.3).
Card 5/7

22982

Contribution to the summary of a S/180/61/000/003/010/012
E111/E152

Another view (Ref.28) is based on that of Haveling (Geveling) that the liquid eutectic is a compound decomposing on crystallization. Chemical microheterogeneities, however, are not developed in all systems (Ref.30). Although the energy of mixing of liquid eutectics is almost always positive and thus favours the possibility of their development, this has been experimentally confirmed (e.g. Refs. 4, 29, 33 and 34: K.P. Bunin, Izv.AN SSSR, OTN, 1946, No.2). The view that negative deviations from ideality arise in all Me-Si systems (Ref.24) is incorrect. There was comparatively little discussion of the structure of chemical compounds in the liquid state. The only clear fact on this is that strong bonds in the solid state tend to persist into the liquid: this has much experimental support (Refs. 25, 26, and Ref.35: A. Roll', present journal, 1960 No.6; Ref.36: E. Gebhardt, M.Becker, Z.Metallkunde, 1955, 46, 90; 1955, 46, 669; Ref.37: D.K. Belashchenko, present journal, 1960 No.6; Ref.38: V.M.Glazov, Tam Zhe, 1960, No.5; Ref.39: A.A. Vertman, A.M. Samarin, Izd. AN SSSR, 1960; Ref.40: A.A. Vertman, V.M. Glazov, present journal, 1959, No.1). From experimental data (Ref.41: A.F. Skryshevskiy, Tam Zhe, 1960, No.6. Ref.42: V.M. Glazov, A.A. Vertman, DAN SSSR, Card 6/7

22982

Contribution to the summary of a ... S/180/61/000/003/010/012
E111/E152

1958, V.123, No.3. Ref.43: V.M. Glazov, D.A. Petrov, DAN SSSR, 1958, V.120, No.2. Ref.44: V.M. Glazov, D.A. Petrov, Izv. AN SSSR, OTN, 1958, No.4), Skryshevskiy concluded that chemical compounds melt without appreciable dissociation and remain fairly stable above the melting point. But this does not apply to Au-Sn (Ref.45: A.S. Lashko, DAN SSSR, 1959, V.125, No.1). Additional information is provided by surface-tension (Ref.19) and viscosity (Ref.46: V.N. Yeremenko, V.I. Nizhenko, Yu.V. Naydich, present journal, 1961, No.3) data. Interaction between elements in ternary alloys was also considered (Ref.48: V.M. Glazov, Izv. AN SSSR, 1960). The discussion showed the need for a thorough study of composition - property relationships. There are 48 references: 46 Soviet, 1 German and 1 English. The English language reference reads as follows: Ref.8: J.D. Bernal, Scientific American, 1960, 203, No.2.

SUBMITTED: March 18, 1961

Card 7/7

SHVIDKOVSKIY, Ye. G.; TYAPUNINA, N. A.; PREDVODIYELEV, A. A.

"Dislocation Structure and Dislocation Multiplication in Cadmium Crystals"
Paper Was submitted at the International Conference on Crystal
Lattice Defects at Kyoto, 7-12 Sep '62

(for Shvidkovskiy, ye. g.) Inst. of Crystallography, Acad. of Sci., USSR,
Leninsky Prospekt 59, Moscow, V-333

SHVIDKOVSKIY, Ye. G.; MELOZEROVA, E. P.; TYAPUNTINA, N. A.

"Effect of High Frequency Vibrations on Dislocation Structure
and Internal Friction In Lithium Fluoride Crystals"

Paper was submitted at the International Conference on
Crystal Lattice Defects at Kyoto, 7-12 Sep '62

(for Shvidkovskiy, ye. g.) Inst. of Crystallography, Acad. of Sci.
USSR, Leninsky Prospect 59, Moscow, V-333

Shvidkovskiy, Ye. G.

S/169/63/000/003/006/042
D263/D307

AUTHORS: Alekseyev, P.P., Besyadovskiy, Ye.A., Biryukova, L.A.,
Golyshev, G.I., Ivanovskiy, A.I., Izakov, M.M.,
Kokin, G.A., Kurilova, Yu.V., Livshits, N.S., Petrov,
A.A., Rozhdestvenskiy, B.G., Solov'yev, N.V., Speran-
skiy, K.Ye., Khvostikov, I.A., Shvidkovskiy, Ye.G.
and Shcherba, I.A.

TITLE: Study of the upper layers of the atmosphere with the
aid of meteorological rockets

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1963, 28,
abstract 34166 (Tr. Vses. nauchn. Meteorol. sovesh-
chaniya. T.I.L., Gidrometeoizdat, 1962, 91-103)

TEXT: In the present review-type article the authors give
the results of studies carried out at Tsentralnaya aerologicheskaya
observatoriya (Central Aerological Observatory) on atmospheric sound-
ing with meteorological rockets. Measuring methods are described and
the main points are given for obtaining such atmospheric character-

Card 1/2

S/169/63/000/003/006/042
D263/D307

Study of the upper layers ...

istics as pressure, temperature, and wind. Certain results are given: data of seasonal temperature variations at heights up to 50 km in the middle latitudes of the USSR and in polar regions, cases of sudden warming up, characterization of temperature distribution curves, a table characterizing the temperature inversion below the stratopause under the conditions of polar night, and data regarding the circulation in the upper atmospheric layers. Information is given on the constructed meridional sections of temperature fields and on the zonal component of the gradient wind. (25 references).

[Abstracter's note: Complete translation]

Card 2/2

S/003/62/000/006/001/001
B117/B110

AUTHORS: Khrgian, A. Kh., Professor, Doctor of Geographical Sciences, Shvidkovskiy, Ye. G., Professor, Doctor of Physics and Mathematics

TITLE: Soviet scientists attending the Assembly of Geophysicists

PERIODICAL: Vestnik vysshey shkoly, no. 6, 1962, 71-72

TEXT: The tasks and activities of the International Union of Geodesy and Geophysics and the participation of Soviet scientists in its work are briefly reported, especially their contributions to the Helsinki assembly at the summer 1960 which was attended by 1740 delegates from 60 countries. At the meetings of the Association for Meteorology and Physics of the Atmosphere, A. M. Obukhov (USSR) reported on the choice of a baroclinic model of the atmosphere best suited for predictions, and S. V. Nemchinov on the solution of the system of equations for forecasting. The only report dealing with the clouds in the troposphere was that by N. Sh. Bibilashvili (USSR) on the physics and dynamics of convective clouds.

Card 1/3

Soviet scientists...

S/003/62/000/006/001/001
B117/B110

The problem of atmospheric ozone formed an important item in the working program of the assembly. This was studied by the International Commission of Atmospheric Ozone on which A. Kh. Khrgian (MCU) served as delegate from the USSR. In the Symposium on the Geophysical Aspect of Cosmic Rays 17 reports were presented, including that by D. D. Krasil'nikov (Yakutskiy filial AN SSSR (Yakut Branch AS USSR) on temporary and latitudinal variations of cosmic rays, their anisotropy and relation to the cosmic activity of the sun, and the interplanetary magnetic field. In the Symposium on Chemical Processes and Radioactivity of the Atmosphere, Ye. S. Selezneva of the Glavnaya geofizicheskaya observatoriya (Main Geophysical Observatory) reported on the results of the chemical analysis of precipitations in the USSR. Her report was based on information from 13 USSR observatories set up specially for the International Geophysical Year. Soviet scientists made considerable contributions to the investigation of northern lights and related phenomena. The observations they had collected were used in reports by Western scientists. The next assembly is planned for 1963. Its main tasks will be an evaluation of the material collected during the past International Geophysical Year and preparations for the International

Card 2/3

Soviet scientists...

S/003/62/000/006/001/001
B117/B110

Year of the Calm sun. The USSR is expected to take part actively in the 1963 assembly.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov).

Card 3/3

L 43577-65 EWT(1)/EWT(m)/T/EWP(t)/EEC(b)-2/EWP(b)/EWA(c) Pi-4 IJP(c)
JD/GG

ACCESSION NR: AT5009587

Z/0000/62/000/000/0255/0258

AUTHOR: Shvidkovskiy, Ye. G.; Shaskol'skaya, M. P.; Tyapunina, N. A.; Predvoditelev, A. A.; Durgaryan, A. A.

TITLE: Relationship between the nonelastic properties of solids and dislocations in crystals

SOURCE: Konference o monokrystalech. 4th. Turnov. 1961. Sbornik referatov.
Turnov, VUM, 1962, 255-258

TOPIC TAGS: internal friction, crystal dislocation, plastic deformation, metal crystal structure, copper, tin, zinc, cadmium, bismuth, lithium fluoride crystal, crystal defect, xray bombardment

ABSTRACT: To elucidate the mechanism of internal friction and the role of dislocations therein, the authors carried out experiments in order to determine the dependence of internal friction on preliminary plastic deformation in single-crystal and polycrystalline samples of copper, tin, zinc, cadmium, and bismuth. A quartz resonator was employed in the measurements. All the metals showed a maximum in this dependence at 40 - 240 cps. An evaluation of the experimental data for metals, made from the two standpoints

Card 1/2

L 43577-65

ACCESSION NR: AT5009587

2

of dislocation relaxation and temperature relaxation, shows that both of these concepts do not contradict the experiment. Lithium fluoride crystals were then studied in order to gain further insight into the relative roles of these two mechanisms of relaxation. In this case, the study of internal friction in relation to preliminary deformation showed that in lithium fluoride crystals the internal friction and dislocation density remain constant in the region of elastic deformation. As in metals, the rise in internal friction begins simultaneously with the start of bulk volume plastic deformation. As the preliminary deformation is increased further, the rise in internal friction and dislocation density becomes parallel. Lithium fluoride samples subjected to x-ray bombardment before and after deformation were also studied, and the results are interpreted in terms of point defects. Orig. art. has: 5 figures, 8 formulas and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University);
Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: 83, MM

NO REF SOV: 000

OTHER: 000

598
Card

2/2

S/070/62/007/003/023/026
E132/E460

AUTHORS: Shvidkovskiy, Ye.G., Tyapunina, N.A., Belozerova, E.P.

TITLE: The influence of an electric field on the behaviour
of charged dislocations

PERIODICAL: Kristallografiya, v.7, no.3, 1962, 471-472

TEXT: Crystals of LiF and NaCl were etched chemically in an electric field of 0.3 kV/mm and also without a field and the etch pits were compared. The faces of the plates lying parallel to the electric field were examined. In the case of LiF the etch pits were drawn out and similar results were obtained for NaCl. In the latter case, a minimum of 2 kV/cm was found to be necessary to produce an effect. The most likely explanation is that the dislocations move under the influence of the field. There are 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni
M.V.Lomonosova (Moscow State University imeni
M.V.Lomonosov)

SUBMITTED: September 17, 1961

Card 1/1

36383

S/070/62/007/003/024/026
E132/E460

24,7560

AUTHORS: Shvidkovskiy, Ye.G., Tyapunina, N.A., Belozerova, E.P.

TITLE: The generation of dislocations during the vibration of crystals of lithium fluoride and sodium chloride

PERIODICAL: Kristallografiya, v.7, no.3, 1962, 473-474

TEXT: Crystals of LiF were oscillated mechanically as a double oscillator (LiF coupled to quartz) for an hour at 100 kc/s. The amplitude was in one case 2×10^{-6} and in a second run 2.7×10^{-4} which correspond to stresses of 0.02 and 2.3 kg/mm² respectively; the limit of flow being 0.5 kg/mm². The crystals were etched and examined for dislocations before and after treatment. Before oscillation the dislocation density was approximately 10^4 cm⁻². In the case of the specimen oscillated below the limit of flow no new dislocations were observed but for the other specimen new dislocations had been generated. Similar results were obtained for crystals of NaCl. These are in agreement with the observations of other authors. There are 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova (Moscow State University imeni M.V.Lomonosov)

SUBMITTED: September 17, 1961
Card 1/1

IVANOVSKIY, A.I.; REPNEV, A.I.; SHVIDKOVSKIY, Ye.G.

Calculation of additional terms in hydrodynamic equations
accounted for by photodissociation reactions and pair
recombination of atoms with emission of a photon. Trudy
TSAO no.46:16-33 '63. (MIRA 17:1)

BELOZEROVA, E.P.; TYAPUNINA, N.A.; SHVIDKOVSKIY, Ye.G.

Multiplication of dislocations in alkali halide crystals under
the action of high-frequency vibration. Kristallografiia 8
no.2:232-237 Mr-Apr '63. (MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 12797-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD
ACCESSION NR: AP3000773 S/0070/63/008/003/0405/0412 58
57

AUTHOR: Tyapunina, N. A.; Predvoditelev, A. A.; Marty*nyuk, G. K.; Shvidkovskiy, Ye. G.

TITLE: Investigation of dislocation structure and the propagation of dislocations in cadmium crystals

SOURCE: Kristallografiya, v. 8, no. 3, 1963, 405-412

TOPIC TAGS: Frank-Read source, hexagonal crystals, Cd, dislocations, Burgers vector, slip band

ABSTRACT: Because the literature is unclear on how points are provided for pinning dislocations to supply a beginning for a Frank-Read source, the authors have undertaken an analysis of possible intersections and interactions of dislocations in hexagonal crystals. They have made experimental tests by selective etching to determine dislocations, and they conclude that hexagonal crystals have favorable conditions for the formation of points that pin dislocations during plastic deformation. They conclude further that the restraint on dislocations to move in planes of the prism or the second-order pyramid considerably exceeds the restraint on movement in the basal plane, which impedes transverse slipping. Thus, during plastic deformation in hexagonal crystals, dislocations apparently
Card 1/2

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ACCESSION NR: AP3000773

occur chiefly by operation of a Frank-Read source, and this leads to the experimentally observed localization of slip bands. Orig. art. has: 4 figures, 3 formulas, and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University)

SUBMITTED: 06Jul62

DATE ACQ: 21Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 007

OTHER: 014

Card 2/2

SHVIDKOVSKIY, Ye.G.; MARTYNKEVICH, G.M.; MALYAROVA, G.V.

Effect of the irradiation of indium by thermal neutrons on the
molecular composition of its vapor. Dokl. AN SSSR 149 no.4:
816-817 Ap '63. (MIRA 16:3)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova i
TSentral'naya aerologicheskaya observatoriya. Predstavleno
akademikom Kondrat'yevym.
(Metals, Effect of radiation on) (Neutrons) (Indium)